

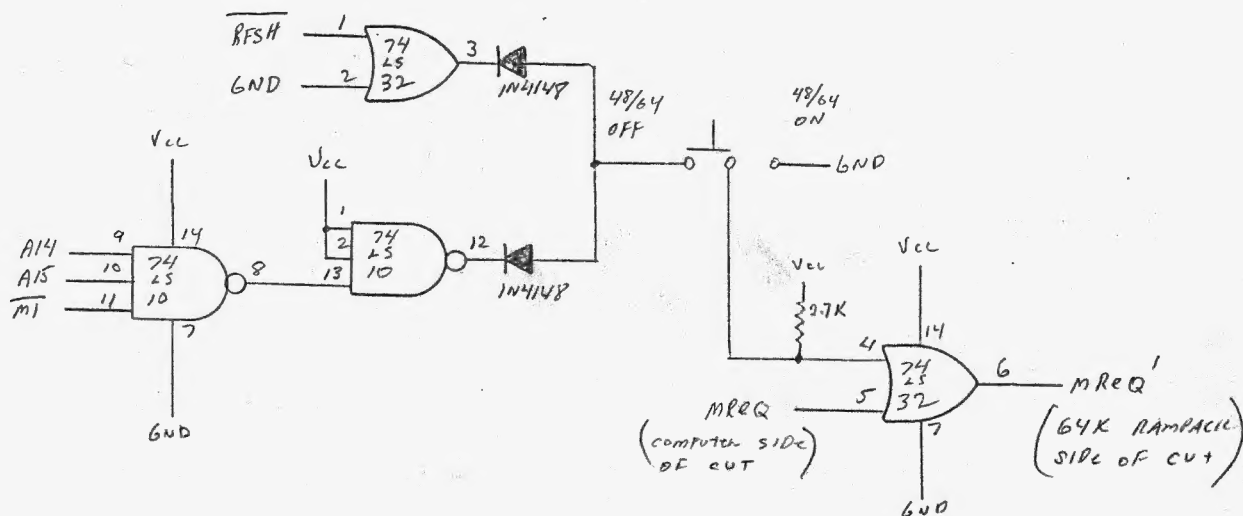
FOR HOT Z V1.00 - (LATER VERSIONS MAY USE  
DIFFERENT KEYS - IDEA IS SAME)

HOW TO PROGRAM A 2764 EPROM USING "HOT Z" (C), TO STORE A  
ZX-81 PROGRAM IN HIGH MEM (C000H) FOR MC DOWNLOADING.

The program to be stored on eprom must have been previously  
saved to tape. The eprom will be programmed exactly as it is  
stored on tape, so if you don't need variables, clear before  
SAVING to tape to save eprom space.

- 1) Load or run "HOT Z".
- 2) Enter C009 in read mode, hit "Y", hit "P", enter FFFF.
- 3) Hit "J", start tape for Loading, then hit "ENTER".
- 4) When pattern on CRT screen shows the entire program has been loaded, hit "BREAK". (space)
- 5) Look at locations C014 + C015.
- 6) Enter the 2 digets shown in C015, then the 2 digets shown in C014-1. (EG. If C014=8F, and C015=5D, enter 5D8E.)
- 7) You are now at a location in the 4000-7FFF block. Add 8000h to the number you just entered and enter it. (EG. In our example, you would enter DD8E, because 5D8E+8000=DD8E.)
- 8) You are now at at location in the C000-FFFF block. Hit "K" to find the decimal equivalent of the address we are at now, and write it down. (EG. In our example, we would write down 56718.)
- 9) Now hit "Q" to quit to Basic. The 2764 programmer should have already been set up + ready to go, with an eprom in it.
- 10) Enter a typical Basic eprom programming program. Use 49161 for the first number in the for/next loop, and the number you wrote down for the second number. (EG. In our example, you would have FOR N=49161 TO 56718 for this line.) If the number you previously wrote down is greater than 57352, then you will have to program two eproms to hold the program, as it is longer than 8K. Use 57352 as the second number this time, and use 57353 for the first number of the FOR/NEXT loop next time. You will have to load in the program again at C009 with "HOT Z", and program another eprom with the rest.
- 11) Turn on Vpp to the programmer, and enter GOTO 1. Your eprom will now be programmed.
- 12) If there is already another program on the eprom, simply enter LET X=(next avail. bytes' location) for the line setting the programmers' initial starting address. Do not separate the programs with anything. The downloader program will calculate where the program begins on downloading. Be sure, if you do already have a program on the eprom, that you have enough room left on it to hold the new program. A line like IF X)=16384 THEN STOP in the programming program will stop the routine from going too far.

64 K RAM MODIFICATION TO TURN OFF  
THE 48-64K BLOCK OF RAM.  
(NOT NEC. WITH THE 64K RAM IN SQ NO. 3)



CUT MREQ TRACE ON EXPANSION BOARD RIGHT BEFORE RAMPACK, &  
INSTALL CIRCUIT ABOVE.

## 2764 READ BOARD Theory of operation

If MREQ NOT is active (low) and PORT SEL NOT (if used) is high (will be pulled high by R2 if not used), the 74LS138 Binary decoder chip will sample its input lines, connected to addresses 13, 14, and 15, and depending on the binary value of these address lines, bring one of its' output terminals active (low). Thus, the decoder chip is capable of selecting just where in memory a particular eeprom is mapped at, via the use of a jumper to its' appropriate output pin.

If the boards' ENABLE switch is switched on, the CPUs' RD NOT signal is applied to the eeproms' CS NOT input. Then, if RD NOT goes active, and after this the OE NOT input goes active from the decoder chip, the eeprom takes the contents of the address pointed to with address lines A0-A12, and puts it on the data bus. The access requirement of the circuit is determined from the time that RD NET goes active low, rather than when OE NOT goes low, because of the way the eeprom is constructed. (rated access time is typically 2 times faster from OE NOT to valid data verses CS NOT to valid data).